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## Chapter 8

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# Employee participation Case study

*Ole Busck*

### Introduction

The case study to be presented in this chapter, named the KRAM project after the Danish initials for Quality, Resources, Work environment and Environment, was initiated in 1992 at two plants of the fish processing company RahbekFisk in Denmark. During two years the company's 300 front-line workers, of which most were unskilled women, passed through a training and competence-building programme consisting of 2 x 2 weeks education and teamwork at a training centre separated by one month 'internship' at the plant. The project was designed by S. Handberg of the Department of Development and Planning at Aalborg University.

The case is chosen because of its unique and pioneering character and because it illustrates the main findings of the previous chapter. The project demonstrated a unification of societal and company-internal needs of transforming technology and organisation to better meet environmental, working environmental and quality requirements through the activation of the employee resource applying a carefully designed methodology.

It is an example of employee participation in environmental work of the fourth and most advanced form presented in the previous chapter bearing the characteristics of intensive participation. Despite commitment from management, successful activation of the employees' potential, organisational changes agreed to in advance and clearly positive performance results, it eventually dissolved into conflict, disillusion among workers and cease of interest from management presumably on account of the internal barriers to change.

The KRAM-project has been referred to as a paradigmatic case (Sørensen 1993, p.11) by virtue of its synergetic combination of environmental, working environmental, quality- and profit-aspects embedded in a competence-building training programme. It served as a model for other projects of employee participation as well as for the institutionalisation of the project methodology in the national, vocational training system, the AMU.

## Societal demands for changed technology and work organisation in the fish-processing industry

The project design built on an analytical approach to technological development in companies and evolved in interaction with an institutional network seeking to promote cleaner technologies and equal opportunities in the industry.

An initial technology assessment of the company founded on previous research in the Danish fish-processing industry (Christensen 1991, Handberg 1993) demonstrated a prevalent growth rationale based on the over-consumption of natural resources (energy, water) and under-consumption of human resources due to an extreme machine-dependent work organisation, which showed in high rates of physical and mental disorders among the workers. In addition, the existing agreements between the social partners not only sustained this pattern, e.g. by holding on to piecework-pay, but also maintained a preferential position to the men in the production.

For these reasons the fish-processing industry for some years had been in the focus of the environmental authorities pressing for cleaner technologies as well as the Health and Safety authorities pressing for the abolition of one-sided repetitive work. The KRAM project took advantage of the declared objectives of local and central government agencies to change the performance of the industry. It pinpointed the 'waste' in human, environmental and economic terms in production and drew up an alternative growth rationale claiming that by changing technology and work organisation the hidden human potential in the production could be activated and also fulfil management's declared interest in increased quality.

Furthermore, the project rested on an alliance between different labour market actors at national and local levels: trade unions, vocational training centres, employment service centres, equal opportunity institutions, etc. On the

one hand this demonstrated the holistic design of the project (and ensured financial support) on the other hand it rendered vulnerability if, as it showed out, the company's own interest in continuing the project failed and the institutional pressure on the company's decisions could not be sustained.

It is characteristic that the KRAM project was implemented in the years 1993 and 94. In Denmark this period probably represents the peak of the political and institutional influence in companies regarding their environmental performance built up through public pressure and administrative measures during the 80s. The focus of the environmental regulation was on clean technology, and a new scientifically based approach to the regulation of companies was in the establishing forcing industry to implement best available technology. Experiences from a series of projects were accumulated to be directly converted into threshold limit values and provisions in the regulations. A wide range of instruments including subsidy programs were available to the authorities and a network of institutions and actors were influential in the attempt to impact on technological development in companies (Busck & Handberg 1995, Nielsen & Remmen 2002).

From 1995 and onwards, however, the focus of the environmental regulation shifted to organisational measures and more pro-market instruments. Organisational issues are important to environmental progress but the new approach was linked to an un-sustained belief in the self-regulating interests of companies. It gave priority to EMS and in general reduced the influence of institutional actors relative to market forces and management's control of technological development.

## The essential preconditions of the project

The KRAM project took its point of departure in three assumptions, each of them based on underlying, scientifically sustained logics (Handberg 1993):

1. The technological change in companies required meeting the demands of environmental and safety and health authorities presupposes a focus on *a: the work procedures* to realise environmental gains and *b: the work organisation* to realise work environmental gains. Hence, *the employees have to be focused and involved in the technological change*.

There is, furthermore, a dynamic relation between the activation of the employees in order to realise environmental gains through changes in the work

processes and the reduction of psychological and physical strains due to harmful, locked work positions.

2. Activation of the employee resource presupposes *training and education* in order to *a*: approach *the 'hidden' knowledge* based on the experiences of the employees, which may be transformed into useful, concrete knowledge, *b*: establish a fundament for the *appropriation of new knowledge* and *c*: build *competences* that facilitate the organisational changes associated with improved technology and quality.

3. An experiment of this kind must integrate elements that *sustain* the activation of the employees and ensures that the knowledge created and competencies built by the employees are *used and practised in a continuous process*.

In the initial phase of the project implementation an agreement with management was settled, in which it promised to establish a new organisational structure to carry through the proposals of the employees in the process of their finishing the training programme.

Besides resting on concrete research in the fish-processing industry these three assumptions reflect consideration of the dynamics, which are set off when practising employee participation in any company. When the employees' resources and knowledge are released expectations tied to the use of them, termed the employees' 'soft demands' in the previous chapter, are also released. The management must be prepared to meet these challenges and adapt its organisation to changes.

## The methodology

An insight into cognitive processes and educational philosophy lay behind the project. When it comes to unskilled workers, especially the strenuously working female workers subdued in a double sense, traditional teaching is not effective. Furthermore, as the purpose of the training programme was not to achieve specific qualifications but to access the hidden knowledge and build competencies an appropriate pedagogical method had to be used.

The project found this method in the so-called 'experience-learning', originally presented by the Brazilian Paolo Freire, further developed by the German 'Frankfurter' school (e.g. O. Negt) and influential in the teaching philosophy of the two Danish universities, Aalborg and Roskilde, where prob-

lem-based learning (PBL) plays a central role. PBL was actually a central feature of the training programme – adapted to the cognitive and intellectual potential of the employees.

The pedagogical method of the project was characterised by certain beliefs or assumptions (Handberg 1994):

- The employees possess '*hidden*' *knowledge*, i.e. a pool of unorganised and unused experiences related to the work and production processes.
- The *total 'life-world'* of the employees has to be involved. For example concrete practices of water saving from the homes of the workers to make them understand why and how the environmental aspect of the production should be attended to. Remembrances, recognitions, experiences are all channels to access the hidden and potentially useful knowledge.
- It is necessary to access and vitalise the existing knowledge of the employees from both production and every-day life to make them capable of building *new knowledge* on top of the existing.
- The employees basically *want their knowledge used* and want to contribute to an improved performance of production in economic, qualitative, environmental and work environmental terms
- *An individual as well as a collective knowledge* exist among the employees for which reason the training programme must be based on group work and teamwork.

Interestingly, this method of 'experience-learning' had never been adopted in the AMU training system. The teaching of specific skills shaped after the specific needs of local companies was and is the core business of the training centres. Researchers from Aalborg University had to take active part in the training programme to help the local AMU teachers carry through this new model and pedagogy.

## The institutional set-up

The company, RahbekFisk, did not share the project's analysis of the problems in the production. However, it had come to realise that a more quality-oriented focus was needed and was preparing for an ISO 9000 implementation. Besides, for some time it had been discussing the need for training and education in a joint committee with the employees. From the part of management the interest was primarily a lift in work-specific qualifications whereas for the employees it was broader qualifications and personal development.

The decision to engage in the project came about through a mixture of external and internal pressures and needs and was facilitated by the institutional network. The local environmental and working environmental authorities were pressing for solutions related to the technology and work organisation. RahbekFisk was associated to the local “Green city-network” aspiring for respectable environmental and work environmental standards. Furthermore, the company participated in a project of the Danish Energy Agency to reduce energy consumption. The fact that the local job service centre administered a national scheme that paid for substitute labour while the permanent workforce participated in training after a rotational principle also facilitated the implementation, as did the local AMU centre’s opting for carrying through a training programme for the company’s employees, which would also be financed from external sources. Finally, the involved unions, primarily the female workers union, KAD, also pressed for education and together with institutional actors stressed the aspect of equal opportunities.

In this setting the project functioned as a catalyst. The management was convinced by the project’s promise of reducing the ‘waste’ in production due to low quality of product, environment and work environment standards in production through training and involvement of the employees. At the first planning meeting it was made quite clear to the management that the project had as a fundamental requirement the establishment of a new organisational structure in the company. The employees’ participation was to be embedded in “development-circles” with the purpose of applying the employees’ proposals and new competencies in a continuous process of change in the company. The management agreed to this, albeit expressing a fear that the existing forums of cooperation in the company would be challenged (Sørensen 1993, p.116).

## Project design and implementation

Based on ‘experience-learning’ and introducing PBL in vocational training it was a key feature of the training programme to capacitate the employees to identify, analyse and elaborate solutions to the quality problems in the production. For this reason the training programme was organised in three stages:

1. 2 weeks at the AMU training centre with lectures in quality-requirements, environmental and work environmental aspects and the PBL-method. The education included brainstorming and focused on common discussions and group work to open the minds, motivate and access the ‘hid-

den' knowledge. The period also included basic training in the use of a computer (which at that time was quite new to most employees) and in the use of a basic set of audit-forms (see box) forming the prime tool of the training programme.

2. 4 weeks back in the company with 3 hours off time per week for every employee to register problems in the production and filling out the audit forms. In groups of three they chose a specific operation to chart and analyse. Special premises for the group work and computer registrations by the employees were established.

3. 2 weeks at the training centre, where the groups produced reports identifying waste and quality-problems in the specific operation they had been concentrating on and elaborating proposals for solution. Facilitated by a common 'future-workshop' the group reports were converted into an action plan for the whole team. On the final day this plan was presented to and discussed with representatives of the management. Finally a report was drafted and a representative of the team elected to join the 'development-circle'.

#### **Audit procedure by the employees**

A set of 5 forms were used to guide the groups of employees through the steps of an audit process bearing much likeness with a simple EMS.

Form 1 concerned *the objective* of improvements in the chosen operation in respect of environment, safety and health, quality and product.

Form 2 *describing the process* and its effects on the 4 parameters.

Form 3 was a *registration form* to be filled in regularly on issues relating to the 'waste' or the problems regarding:

- the work environment (physical and chemical health affecting factors, including organisational issues like wages, management, working hours, sex-linked division of work, etc.)
- the environment (consumption of water, energy, packaging, waste and wastewater generation)
- the quality (problems with raw materials, technical matters, work procedures, work speed/form of remuneration, cooperation)
- the product

Form 4 was an *assessment form* to sum up the results of the registrations compared to the objectives for improvements from form 1 with proposals for solution to the different problems.

Form 5, finally, was an *action plan* to implement the proposals for improvements in the four areas.



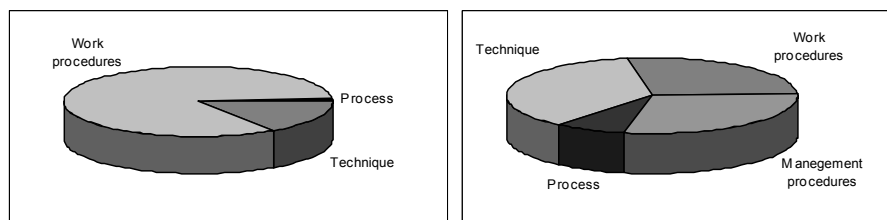
During a period of two years all 300 employees passed through the 3 stages. The middle management was supposed to join the programme by and by, but this was never carried through.

## Results

Although hampered by practical problems often related to lack of information and communication between management and employees the training programme succeeded well. Measured by the contentedness of the employees and the outcome in the form of finalised action plans it was a great success and gave valuable inputs to the technological and organisational changes in the company during the period (Sørensen 1993, Handberg 1994).

Sørensen (1993) studied the proceedings and results of the first three teams to pass the training programme. He concludes that “the reflective learning process has a potential to activate the individual knowledge resource and demonstrate the life-world of the employees as a group as well as add to the single participant and the group of employees the possibility of presenting a series of proposals for solution in an action-oriented perspective.” (p.128). The action plans presented showed that the participants had been capacitated to identify the causes of environmental and work environmental problems and draw up concrete action plans for their solution.

According to Sørensen the audit forms were important to help the participants concretize and systemize their knowledge and experiences from daily work practice. In the initial phase of the programme the employees mostly focused on experienced problems directly related to the work procedures, whereas at the end they recognized the underlying causes and included technical and process-related issues. In the figure below the shift in the focus of the proposals of the employees is presented.

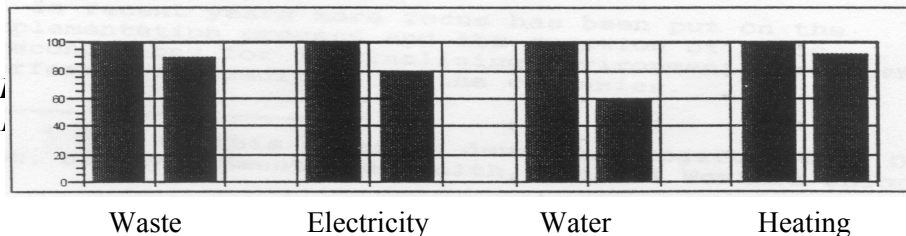


**Figure 1:** showing the shift of focus of the employee-proposals from the first part of the training programme to the final part. Adapted from Sørensen 1993.

Another sign of the maturation that happened during the programme was the growing capability of the groups to realize their own limits and point to other actors in the company, e.g. technicians, to be responsible for changes. According to Sørensen the final action plans reflect the new knowledge that has been created among the employees through the revision process.

Handberg summarises Sørensen's findings in this way: "The assessment of the first three teams shows that essential new knowledge and a dimension of acting based on the operational experiences of the employees are added to the cleaner technology-solutions." Furthermore, "It can be concluded that the training programme capacitates the employees to become competent users...it shows that the individual as well as the collective knowledge has been activated in the process. A common pool of experiences, remembrances and recognitions in this way is reflected at the same time as the individual has had new potentials made visible. Many participants indicate that they want further education as well as influence, and they want that the knowledge which they possess is demanded for and used in the daily work" (1994, p. 55).

The success of the training programme in respect of environmental improvements is perhaps best expressed by a local newspaper article in which a proud leading manager presents the actual reduction in resource use and waste after initiating the project, see illustration below.



**Figure 2:** Showing the percentage decrease per produced unit from 1993 to 1994, "Dagbladet" 20.12.94.

According to Sørensen management only "gradually realized what they had sparked off with the training programme. But at the same time they became more and more positive, even so positive that there was no longer any doubt if they would recommend other companies to embark on a similar project." (1993, p. 115). "It is expressed by management that the employees possess further potentials after finishing the training programme" (Ibid p. 128). What matters to management is that "the employees have been more committed to cooperation...but that again is connected with responsibility. If you are re-

sponsible for the elaboration of proposals and changes then you are bound to bear the responsibility for that it works.” (ibid).

It is an important characteristic of the action plans that proposed changes in the organisation and planning of work made up more than half of all proposals by the employees. Handberg notes that “the participants in this way not only point to concrete aspects of the technology that impacts on the environment and work environment but also to the impact of the organisational structures and managerial practices on the environment and the work environment.” (1994, p. 55).

During the training period and the associated knowledge- and competence-building it is evident that some strong forces are built, partly related to the concrete insight the participants share with each other concerning organisational and managerial barriers to cleaner technology, partly related to the development of self-consciousness. “The motivation and the desire to do something in the company are great” (Sørensen 1993, p. 128). “This is a good precondition to the company to tackle a series of problems and have them solved in common...It must be strongly emphasized, however, that this also places a heavy pressure on management, as the expectations of the participants to make use of the insights they bring with them back are high.”(ibid)

Sørensen refers to the results of an investigation he made of the expectations of the employees. 85% of them indicated that they expected the action plans to be used. The expectations to get solved, in specific, the problems of repetitious work and to get influence in general, were somewhat lower, reflecting, according to Sørensen, “the common cultural knowledge and associated legitimate rules and norms the participants (as a group) have built up during their stay in the company.” (ibid) What Sørensen is referring to here and reflects on is what was called the ‘social constitution of the company’ in the previous chapter.

Interestingly, when a similar investigation of the expectations of the employees was made about a year later, when most employees had been through the programme and had real experiences about the actual use of the action plans in the company the expectations were much lower. Only 50 % of the employees expected that their project would be carried out (Handberg 1994, p.79). Still, a clearly positive attitude to the training programme remained reflecting the fact that notwithstanding the actual use of the proposals in the technological changes in the company the employees experienced a personal development in capacities and competencies that might bear much farther than their actual employment.

## Barriers and conflict

Already in Sørensen's investigation of the first period there are clear signals from management that they are troubled with the agreement on the 'development-circle', the new organisational forum consisting of representatives from the teams to carry through the proposed changes. When Handberg in July 1994 interviewed both management and employees a clear divergence in the assessment of the training programme and its results appeared. To the management it is "the change of attitudes" in the programme that matters. They emphasize that "the employees get better to communicate with us...and get a better understanding of the company in its entirety". The management realizes the "need to educate people further but it should be training in specific machines or functions" (Handberg 1994 p.65). These words are rather different from the foundations of the project.

Among the employees frustration reigns. "We have acquired insight in our work processes...and how to avoid wastes. Many point to the high speed and repetitious work and many want pay per hour in stead of per piece....It has been difficult to get the action plans through...When we are participating in training and do a big job we think our work should be productive." (Ibid). During 1994 the company was sold by its Danish owners to a British company. This may be part of the explanation why this change in the management's view has taken place and why the views of the two parties now differ so much.

Handberg finds that it has been very difficult to get the 'development-circle' going, "due to conditions in the company's organisation" (1994, p.70). "Management admits that too long time has elapsed. The company was not geared to receive all these action plans and work them up organisationally. This meant that dejection spread among the employees. It was not visible to them that they were taken in serious." (ibid). Much of the problem showed out to be missing communication from the management to the employees about realisation of proposals. Actually many of the ideas and proposals concerning work procedures and technology were carried out – the graph from the newspaper article is an evidence of that – they were just not being dedicated to the employees. In other words, management appropriated the knowledge of the employees without giving anything in return. It is clear from Handberg's interview of employees that they felt left out.

Reviewing the project's course as of July 1994 Handberg states: "The companies need the knowledge that the employees possess by virtue of their experiences from production and they need the commitment of the employ-

ees. The conditions of the employees to make this knowledge available and commit themselves are, except from the wage, influence at the work-place and involvement in the planning, that they are consulted, e.g. by purchase of new technology, changes in work procedures, development of new products etc.” (1994, p. 78). By retreating from the initial agreement to make room for the established competencies and influence of the employees and in so doing refusing the fundamental ‘bargain’ the management abolished the basic precondition for continued employee participation.

After finishing the training programme in the beginning of 1995 (but not the implementation of the action plans) the conflict sharpened. Increasingly the management blocked the integration of employees in their planning of changes and frustration spread among the employees. From both parties more willingness to cooperate was called for. The situation soon became deadlocked and paralysed all institutions of cooperation in the company.

This is serious in a Danish context where management according to the General Agreement of the Social Partners has the right to “control and distribute the work” but, as it continues, it must be: “in cooperation between the social partners” (Hovedaftalen 1993) The so-called ‘tribunal of cooperation’ consisting of representatives from the two main organisations of the social partners had to intervene in an attempt to solve the conflict at the plant. At this point, however, all intentions and opportunities to continue the project had disappeared and, although never officially cancelled, it dried up. Employee participation in the environmental work of the company based on competence-building and organisational changes ceased.

## Application of the KRAM-methodology into the national vocational training system

Notwithstanding the failure to carry through the project at RahbekFisk due to a conservative management and an inflexible company organisation (cf. the discussion on the concept of ‘the company’s social constitution’ in the previous chapter), a group of major Danish industries with a proactive environmental attitude took interest in the project. Through the joint educational committee of the Confederation of Danish Industries and Danish Metalworkers’ Union in 1993 they asked S. Handberg to design and test a training programme based on the KRAM-methodology (Handberg 1994, rapport).

What differed was the context in that the somewhat backward and conservatively run fish-processing industry was substituted by lead-industries in envi-

ronmental and managerial aspects. Furthermore, the group of employees to be trained had a higher level of qualifications and competencies. This could partly explain the fact that the training period was reduced in extensity. The original design was concentrated into an initial 3-day course of “environmental consciousness” followed by a second course of “environmental work” split into 2 days at a training centre, 4 weeks of ‘internship’ in the company using the original audit tools and 3 days in the training centre again to sum up and produce the action plans. Moreover, middle-management was included in the training programme. Finally, although maintaining a recommendation that real changes in competences should follow the training period, the ‘development-circle’ was left out. Instead it was left to the companies to decide by themselves in which forum they would follow up on the action plans be it joint safety committees, cooperation committees or ad hoc environmental committees (Ibid).

By 1995 the programme had been successfully tested at a group of large Danish companies and it was decided to establish it as part of the permanent training programs in the AMU-system. For once, problem-based and project-organised learning were introduced in the national vocational training system. As of 2005 it is still a part of the AMU system and is looked upon as an effective way of building employee participation in environmental work in companies (Pedersen 1999). Nevertheless, only few companies, environmentally proactive and democratically oriented in their style of management, make use of the programme.

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